

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HOWARD M. THOMSON



Appeal No. 2006-1297
Application No. 10/699,595
Technology Center 3600

Decided: August 14, 2006

Before OWENS, CRAWFORD and BAHR, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the examiner's rejection of claims 1-8.

We AFFIRM.

BACKGROUND

The appellant's invention relates to a prestressed concrete flotation structure with improved corrosion resistance and to a floating dock system comprising such structures. A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The examiner relies upon the following as evidence of unpatentability:

Gonzalez	US 3,779,192	Dec. 18, 1973
Thomson	US 3,799,093	Mar. 26, 1974
Shorter	US 3,967,569	Jul. 6, 1976
Robinson	US 6,035,797	Mar. 14, 2000
Rytand et al. (Rytand)	US 6,450,737 B1	Sep. 17, 2002

The following rejections are before us for review.

Claims 1, 2, 4, 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thomson in view of Gonzalez and Shorter.

Claims 3, 5 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thomson in view of Gonzalez, Shorter and Rytand.

Claims 3, 5 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thomson in view of Gonzalez, Shorter and Robinson.¹

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding this appeal, we make reference to the final rejection (mailed October 25, 2004) and examiner's answer for the examiner's complete

¹ This was a new rejection set forth in the answer (mailed August 10, 2005).

reasoning in support of the rejections and to the appellant's brief (filed May 19, 2005) and reply brief (filed August 31, 2005) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the following determinations.

We turn first to the rejection of claims 1, 2, 4, 6 and 7 as being unpatentable over Thomson in view of Gonzalez and Shorter. Thomson discloses a floating prestressed concrete wharf unit, and a wharf made from a plurality of such units, the unit 10 comprising one or more cores 12 of lightweight buoyant material such as expanded polystyrene surrounded on all sides by a blanket 18 of concrete, with a layer 20 of wire screening or mesh embedded in the concrete adjacent to and surrounding the core for providing reinforcement to strengthen the concrete against normal loading, temperature effects and shrinkage (col. 3, second para.). The cores preferably are beveled along their longitudinal corners 22, 24 and further include a cutaway portion 26 in the longitudinal sides near the ends 28, 30 of the wharf unit. These beveled portions provide longitudinal space 32 within the concrete blanket 18 in which are located pretensioned cables 34. Where desired for extra strength and flexibility in the upper portion of the blanket 18, transverse pretensioned wires

or cables 48 may be included and attached to each threaded insert 40 or merely stretched between the longitudinal pretensioned cables 34. Thomson does not specify whether the cables 34 or wires 48 are corrosion resistant and does not disclose that the core is encased within a polymeric coating, as called for in each of appellant's independent claims 1, 4 and 6.

Gonzalez discloses a modular concrete floatation unit comprising a precast reinforced concrete slab 11₂, 11₄, the flat side of which forms a walking surface or deck and having a forward wall 12₂, 12₄ and vertically oriented end and side walls 13₂, 14₂, 14_{2B}, respectively, and a vertically oriented inner wall 15 so that two compartments 16₂, 17₂ are formed within the hollow or concave side of the slab. Galvanized steel reinforcement, such as steel reinforcing rods, and wire mesh are located within the concrete slab for added strength. The compartments are tightly packed with one or more blocks 18₂ of cellular foam or plastic coated, wrapped or painted with a suitable protective film or thin cover that prevents attack by acids, corrosives, detergents, organic solvents and the like (col. 4, ll. 18-21). According to Gonzalez (col. 5, ll. 49-51), materials such as polyethylene, polypropylene, polyvinylidene chloride and polyvinyl chloride are suitable for the protective film or cover. An open wood frame is bolted or otherwise attached upon the bottom of the slab to hold the wrapped cellular foam or plastic blocks within the compartments. The structure is open to ingress and egress of water, differing from prior art floatation units that were destroyed by holes or cracks sufficient to permit

ingress of water such as would destroy the buoyancy of the structure (col. 4, ll. 49-53).

Gonzalez teaches that

[a]ttack by acids, corrosives, detergents, organic solvents, and the like, is prevented *in major part* by the protective cover or film, and *partly* by the surrounding concrete. Immiscible solvents, such as gasoline, which float on the surface of the water *often* cannot contact even the protective film or cover of the cellular foam or plastic because of the surrounding layer of concrete [col. 2, ll. 34-41; emphasis ours].

Shorter is relied on by the examiner as evidence of the recognition in the prior art at the time of appellant's invention that cracks develop in the concrete shells of concrete float units. Specifically, Shorter states that “[u]se of the foam block permits the unit to float even though cracks develop in the concrete shell below the water line” (col. 4, ll. 61-63).

In light of the recognition in the art at the time of appellant's invention that cracks tend to develop in the concrete blanket or slab of floating concrete units below the water line, as evidenced by Shorter, the teaching of Gonzalez of coating or wrapping the foam blocks provided within the concrete shell for buoyancy with a polymeric film or cover in order to protect the foam blocks from attack by acids, corrosives, detergents, organic solvents and the like would have provided ample suggestion to one of ordinary skill in the floating concrete structure art to provide such a protective polymeric coating on the cores 12 of Thomson to protect them

from attack by acids, corrosives, detergents, organic solvents and the like that can penetrate the concrete blanket 18 through cracks that develop below the water line. We also agree with the examiner's determination, which has not specifically been challenged by the appellant, that it would have been obvious to form the pretensioned cables 34 and wires or cables 48 of Thomson's wharf unit of corrosion-resistant galvanized steel in view of the recognition in the art, as evidenced by Gonzalez, of the suitability of galvanized steel for such purpose.

The appellant points out that the Gonzalez float unit is not of a construction having a foam or other buoyant core *encased* in concrete, as are the Thomson and Shorter units and as called for in appellant's claims. Rather, the Gonzalez structure is designed to be open to ingress and egress of water (brief, p. 5). Further, the appellant urges that Shorter does not attribute any negative significance to the development of cracks and, instead, teaches that the use of the foam block permits the unit to float even though cracks develop in the concrete (brief, p. 6). Thus, according to the appellant, the examiner's reliance on Shorter does not establish that one of ordinary skill in the art would view the concrete encased foam structure of Thomson or Shorter as requiring any correction or modification (*id.*).

We fully appreciate the structural differences between the open-bottom unit of Gonzalez, wherein the foam blocks are exposed to the water, and the concrete-encased wharf unit of Thomson. We also understand that Gonzalez teaches that attack by acids, corrosives and the like is prevented *partly* by the surrounding concrete and that immiscible solvents that float on the surface of the water *often*

cannot contact even the protective film or cover of the foam or plastic because of the surrounding concrete. Couched in the very wording of this teaching, however, is the recognition that such protection by the concrete, while perhaps substantial, is not complete and infallible. That recognition coupled with the understanding that concrete tends to develop cracks below the water line, as evidenced by Shorter, would have imbued one of ordinary skill in the art with an appreciation of the advantages of providing a protective polymeric coating on the buoyant core 12 of Thomson to protect the core from attack from acids, corrosives and the like, as taught by Gonzalez.

In light of the above, we find no error on the part of the examiner in rejecting appellant's independent claims 1, 4 and 6 as being unpatentable over Thomson in view of Gonzalez and Shorter. Accordingly, the rejection of these claims, as well as dependent claims 2 and 7, which the appellant has not argued separately apart from claims 1, 4 and 6, is sustained.

Dependent claims 3, 5 and 8 further recite a vent extending from the core to an exterior surface of the concrete and in communication with the atmosphere. In rejecting these claims as being unpatentable over Thomson in view of Gonzalez and Shorter and further in view of either Rytand or Robinson, the examiner has taken the position that Rytand's teaching of utility chases 44 through the flotation core 38 of a floating concrete dock section for insertion of utility lines would have suggested provision of such utility chases through the core 12 of Thomson's wharf unit and that such utility chases must inherently communicate with the atmosphere

and, alternatively, that Robinson's teaching of a fluid regulator to prevent the build-up of gasses in the interior of the float generated from reactions within the flotation substance 130 catalyzed by heat when the float is exposed to the sun would have suggested the provision of such a fluid regulator on Thomson's wharf unit to prevent the build-up of gasses generated in the flotation substance when the unit is exposed to the sun. The appellant has not specifically challenged any of these positions taken by the examiner.

With respect to the rejection of claims 3, 5 and 8 as being unpatentable over Thomson in view of Gonzalez, Shorter and Rytand, appellant's only argument (brief, pp. 7-8; reply brief, p. 9) appears to be that Rytand does not disclose any form of a vent. This argument is not persuasive, as it does not address the modification proposed by the examiner, namely, to provide utility chases through the core 12 of Thomson's wharf unit to run utility lines therethrough, or attack the contention of the examiner (answer, p. 7) that such chase would read on the recited vent limitations of claims 3, 5 and 8, regardless of whether it is called a "chase" or a "vent."

The appellant's only specific argument with respect to the rejection of claims 3, 5 and 8 as being unpatentable over Thomson in view of Gonzalez, Shorter and Robinson is that Robinson involves a plastic float drum, not a concrete shell (reply brief, p. 9). The appellant does not, however, contend that the problem of gasses generated in the flotation material by reactions catalyzed by heat from exposure of

the unit to the sun addressed by Robinson has no application to a floating wharf unit.

The appellant's arguments with respect to claims 3, 5 and 8 are not persuasive of any error on the part of the examiner in rejecting these claims as being unpatentable over Thomson in view of Gonzalez, Shorter and Rytand and as being unpatentable over Thomson in view of Gonzalez, Shorter and Robinson. These rejections are sustained.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-8 is
AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Terry J. Owens
TERRY J. OWENS
Administrative Patent Judge

MURRIEL E. CRAWFORD
Administrative Patent Judge

JENNIFER D. BAHR
Administrative Patent Judge

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